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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,640	12/02/2004	Khim Hong Ng	3225-102	1877
6449	7590	04/25/2006	EXAMINER	
ROTHWELL, FIGG, ERNST & MANBECK, P.C. 1425 K STREET, N.W. SUITE 800 WASHINGTON, DC 20005			DANG, PHUC T	
			ART UNIT	PAPER NUMBER
			2818	

DATE MAILED: 04/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/510,640	NG	
	Examiner	Art Unit	
	PHUC T. DANG	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Pre-Amendment filed October 8, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-12 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>100804</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This application is a 371 of PCT/SG03/00290 filed on December 23, 2003.

Preliminary Amendment

2. Preliminary Amendment filed on October 8, 2004 has been considered.

In Preliminary Amendment, Applicants amended claims 5-12.

Claims 1-12 are currently pending in the application.

Oath/Declaration

3. The oath/declaration filed on December 2, 2004 is acceptable.

Information Disclosure Statement

4. The office acknowledges receipt of the following items from the applicant:

Information Disclosure Statement (IDS) filed on October 8, 2004.

Claim Objections

5. Claim 1 is objected to because of the following reasons:

In claim 1, insert "a) through e)" for each limitation because on lines 13-14, step d) and step d) are indefinite. Correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1-5 and 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ying et al., hereinafter "Ying" (U.S. Patent No. 6,300,252 B1).

Regarding claims 1 and 12, Ying discloses an apparatus and a method for etching fuse windows through a passivation layer and at least two inter-metal dielectric layers comprising:

- a) first etching at least a first set of material from a first region of the semiconductor device 42, from the surface of the first set of material in towards the embedded fuse 46;

- (b) measuring the remaining distance between the embedded fuse and the first etched surface of the first region of the semiconductor device 42;

- (c) second etching an amount of the second set of material from the first region of the semiconductor device 42, from the first etched surface of the first region further in towards the embedded fuse 46, the amount of the second set of material being determined based on the preceding measurement of the remaining distance;

- (d) measuring the remaining distance between the embedded fuse and the second etched surface of the first region of the semiconductor device 42; and

Ying discloses the features of the claimed invention as discussed above, but does not disclose a step of determining if the remaining distance measured in step (d) falls within a desired range of distances and, if the remaining distance does not fall within the desired range, returning to step (c). Ying, however, discloses a step of controlling the etching process for each step until reaching to the a certain range for a purpose of improving the fuse window as desired as cited on col. 7, lines 51-67].

Therefore, claim 1 is obviously rendered over Ying.

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Regarding claim 2, Ying discloses wherein the first etching further etches at least an amount of the second set of material [Figs. 3-5].

Regarding claim 3, Ying discloses wherein one of the first and second sets of material comprises at least a passivating layer and the other of the first and second sets of material comprises at least one oxide layer [col. 7, lines 10-12].

Regarding claim 4, Ying discloses wherein the first set of material comprises the passivating layer [col. 7, lines 10-12].

Regarding claim 5, Ying discloses the other of the first and second set of material comprising at least one oxide layer further comprises at least a second oxide layer [col. 7, lines 10+].

Regarding claim 7, Ying discloses wherein the passivating layer comprises a nitride layer [col. 7, lines 10-12].

Regarding claim 9, Ying discloses wherein the fuse is a metal fuse [col. 1, line 59].

Regarding claims 10-11, Ying discloses the fuse is a laser blowing fuse [col. 3, lines 45-49].

7. Ying discloses the claimed invention except for the process parameters as claimed in claim 8. However, the selection of the claimed process parameters would have been obvious to one having ordinary skill in the art at the time the invention was made to perform the desired range of distances within the claimed range, since it is well settle that when the general conditions of a claim are discloses in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

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Allowable Subject Matter

8. The following is a statement of reason for the indication of allowable subject matter:

Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

None of the Prior art of record does not disclose the other of the first and second sets of material comprising at least one oxide layer has uniform diffraction characteristics.

Claim 7 is depend on claim 6, then ,it also would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ikeda (U.S. Patent No. 6,194,318 B1) and Liao (U.S. patent No. 6,174,753).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuc T. Dang whose telephone number is 571-272-1776. The examiner can normally be reached on 8:00 am-5:00 pm.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571) 272-1787. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and Final communications.

12. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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Phuc T. Dang

A handwritten signature in black ink, appearing to read 'Langphuc', with a long, sweeping horizontal stroke extending to the right.

Primary Examiner

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